

Happiness economics from 35,000 feet

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Abstract

The economics of happiness, or subjective wellbeing, is an expanding field, with a growing number of applied papers reporting empirical associations between happiness and other variables. This paper takes a broad view of the topic, aiming to provide an outline of the literature in relation to happiness economics' origins, definitions, theory, methods, applications, critiques, relations with other areas of economic research, political and policy connections, and promising directions for future inquiry.

What is "happiness economics"? At first glance, happiness might seem an unlikely subject of study for a dismal science in which, traditionally, "every mind is inscrutable to every other mind, and no common denominator of feeling seems possible" (Jevons, in Black, 1990, p. 9). It could also seem a slightly presumptuous one: does it suggest an attempt by economists to colonise not just neighbouring disciplines (e.g. George, 2007), but the whole search for meaning in life? It might even come across as somewhat sinister—a cold, rational calculus of human emotion could recall dystopian visions such as those of Orwell's *1984* or Huxley's *Brave New World*. But it is potentially an intriguing subject too: it almost appears to hold out the impossible prospect of an analytical solution to the world's ills. And, for economists, it offers a new (or rediscovered) intellectual territory where the returns to exploration remain relatively high.

This combination of characteristics has assured happiness economics sustained media coverage, certainly out of proportion to the volume of economic research it represents.¹ But that volume is increasing rapidly: Figure 1 on the following page, which plots by year the number of journal article results for a simple EconLit search, gives some indication of its extraordinary growth. And the topic has more recently begun to receive attention—if not always approval—in some of the more prestigious economic journals.²

There are many applied papers that report empirical associations between happiness and other variables. There are rather fewer that treat happiness economics in relation to its origins, definitions, theory, methods, applications, critiques, relations with other areas of economic research, political and policy connections, and promising areas for future research. This paper

¹The UK media regularly reports on happiness research. For example: a BBC TV series, *Making Slough Happy*, aired in Autumn 2005 (BBC News, 2005), and another, *The Happiness Formula*, was shown in Spring 2006 (Rudin, 2006). Happiness was front page news in the Economist's (2006) Christmas edition—'Economics discovers its feelings: not quite as dismal as it was'—and an Independent on Sunday supplement early in January 2007 was devoted to it (Leith, 2007). It has also found a place in popular non-fiction (e.g. Layard, 2005a; Gilbert, 2006; Haidt, 2007). All this is in spite of the fact that, to those not familiar with the preference satisfaction economic orthodoxy, economists' recent findings regarding SWB can sometimes seem underwhelming: "money can't buy happiness" is arguably a cultural commonplace, and related ground was covered over 40 years ago, for example, in Robert Kennedy's celebrated (1968) speech listing all those things not accounted for by the Gross National Product (GNP).

²For example, the Journal of Economic Literature, the Journal of Economic Perspectives and the Journal of Political Economy—three of the top five economics journals by impact factor in the 2008 ISI Web of Knowledge Journal Citation Reports—have all published papers on happiness in the recent past (e.g. Frey & Stutzer, 2002b; Di Tella & MacCulloch, 2006; Rayo & Becker, 2007a).

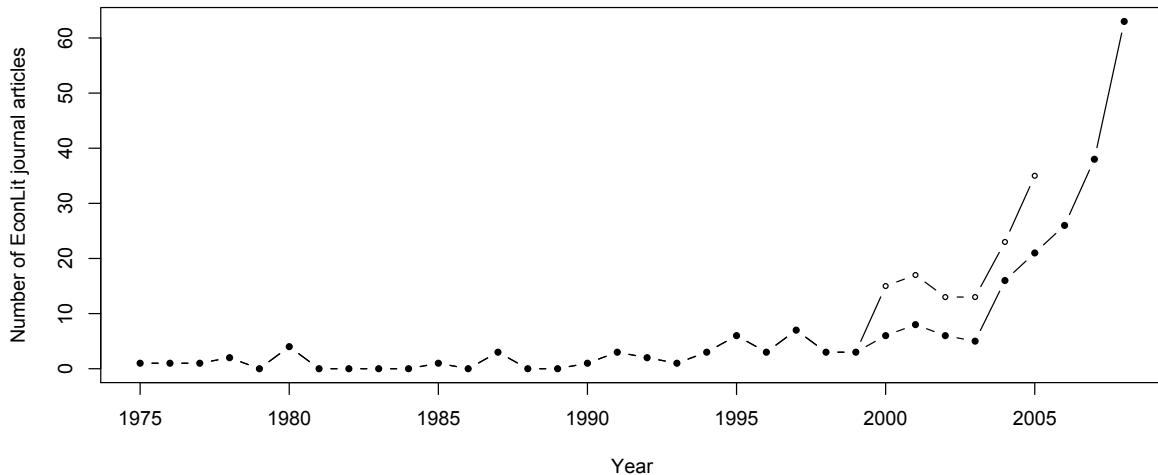


Figure 1: Number of EconLit journal articles with titles including the terms ‘happiness’, ‘wellbeing’, ‘well-being’ or ‘life satisfaction’, by year. The series plotted with filled circles excludes articles from the Journal of Happiness Studies.

aims to provide a broad overview of the happiness economics literature to date in relation to all of these.

Section 1 explores what ‘happiness’ has meant and can mean in economics, principally through the contrast between utility theory and subjective approaches. Section 2 considers how this research proceeds, while section 3 asks if it really constitutes economics. Section 4 asks in what specific areas of the discipline the resurgence of subjective approaches has taken place, and section 5 outlines the main findings. The implications of these findings for public policy are discussed briefly in section 6. Section 7 suggests some future directions for happiness research in economics, and section 8 concludes.

1 What does happiness mean in economics?

In this paper, the terms ‘happiness’ and ‘wellbeing’ are used interchangeably (the weaknesses of this approach are considered in subsection 2.1.1, but it is widespread—see, for example, Ferrer-i-Carbonell, 2005; Ormerod & Johns, 2007; Rehdanz & Maddison, 2005; Easterlin, 2006). Absent any disciplinary affiliation, there is a range of ideas that I might want to convey by such words. A useful typology, distinguishing five broad accounts of wellbeing, is offered by Dolan et al. (2006). Their five accounts are: (1) *preference satisfaction*, in which wellbeing consists in the freedom and resources to meet one’s own wants and desires; (2) *objective lists* (or *basic needs*), in which wellbeing is the fulfilment of a fixed set of material, psychological and social needs, which are identified exogenously; (3) *flourishing* (or *eudaimonic*), in which well-being means the realisation of one’s potential, along dimensions such as autonomy, personal growth, or positive relatedness (e.g. Ryff & Keyes, 1995); (4) *hedonic* (or *affective*), in which wellbeing is synonymous with positive affect balance, a relative predominance of positive moods and feelings; and (5) *evaluative* (or *cognitive*), in which wellbeing is the individual’s own assessment of his or her life according to some positive criterion.

1.1 Preference satisfaction and subjective wellbeing

Orthodox, neo-classical economics relies overwhelmingly on the preference satisfaction (PS) account of wellbeing. The new (and perhaps still somewhat heterodox) happiness economics concerns itself predominantly with the evaluative account, and to some extent with the hedonic account, generally lumping these two together under the banner of 'subjective wellbeing' (SWB). These two principal approaches to happiness in contemporary economics—PS and SWB—do share certain core premises. In particular, they both generally reject external criteria or judgements, privileging the individual as the only one qualified to assess his or her own wellbeing (this allowing both of them potential compatibility with both egalitarian and libertarian political views).

There is much that differentiates them, however. In fact, it is possible to sketch the development over time of each approach as motivated by perceived shortcomings of the other. Several authors point to 'paradoxes' and 'revolutions' in this process (e.g. Frey, 2008; MacCulloch & Di Tella, 2005; Gowdy, 2004). First, the neo-classical (PS) project is born at least partly out of dissatisfaction with the strongly hedonic flavour of late nineteenth-century economics. The cardinalist and utilitarian ideas of those such as Bentham, Mill, and later Edgeworth³ are challenged by others, including Jevons, Pareto, and later Robbins, for whom inter-personal comparisons of happiness are impossible, and for whom neither psychology nor ethics belong within a positivist economic science (Sen, 2008; Bruni & Sugden, 2007).⁴ Later, deficiencies of the PS account and its associated methods spur a 'counter-revolution': the rediscovery within economics of SWB accounts, by Easterlin (whose 1974 paper is often cited as a beginning of this process), the 'Leyden school' (see subsection 4.4), and others. Differing judgements as to the meaningfulness and inter-personal comparability of subjective self-ratings of wellbeing are thus at the heart of the distinction between the PS and SWB approaches. Out of these, each approach has developed its own apparatus of methods, theories and assumptions.

Preference satisfaction In its strictest form the PS approach, since it steers clear of subjective data and rules out interpersonal comparisons, is left with a limited number of interesting things to say directly regarding happiness, or its closest available synonym, utility. In utility theory, utility is only an index, an analytically instrumental quantity, which individuals need not be assumed to experience or understand. Assuming only that individuals' preferences conform to the axioms of completeness, transitivity, reflexivity and continuity, and that they always choose their most preferred option, then individuals will behave *as if* they are maximising utility, and their behaviour can be modelled and analysed as such.⁵ The set of choices an individual can make is understood to be constrained by his or her budget and, assuming non-satiation, a larger budget always implies that more highly preferred options can be chosen. It then follows

³Edgeworth went so far as to imagine the 'hedonimeter', "an ideally perfect instrument, a psychophysical machine, continually registering the height of pleasure experienced by an individual...", whose readings one might "integrate through all time and over all sentience" (1881, in Colander, 2007).

⁴The hedonic and utilitarian economics of the late nineteenth century can in itself be understood partly as a reaction to the classical political economy of those such as Smith, Ricardo and Malthus. Their work is not expressed in the language of (or equipped with the methods now associated with) PS. But it is nonetheless concerned primarily with income, wealth and material needs—understandably, at a time when these were more pressing problems for more people than they are today in what is now the developed world (Pasinetti, 2006).

⁵In respect of the axioms of consumer preference: *completeness* means that for any two options or 'bundles', an individual must prefer one or the other, or be indifferent; *transitivity* means that—for options A, B and C—if the individual prefers A to B and B to C, he or she must also prefer A to C; and *reflexivity* means that if A and B are the same, then the individual must be indifferent between them. These three axioms define economic rationality. To produce defined and 'well-behaved' utility functions, we may also assume: *continuity*, such that if A is preferred to B then things that are sufficiently close to A will also be preferred to B; *non-satiation*, such that having more of A is always preferred, however slightly, to having less; and *strict convexity*, such that some balance of items X and Y is preferred to an extreme quantity of either. A fuller treatment of consumer preference and utility theory can be found in any microeconomics textbook.

that utility will be increasing in income: for utility u and income y , $u = U(y)$, $U' > 0$ and (optionally) $U'' < 0$.

Subjective wellbeing The empirical SWB literature often leaves its theoretical base largely unstated. The premises are also straightforward, though. The fundamental distinction from PS is the conviction that there is a quantity, 'happiness', that individuals experience and that can be measured and modelled directly. SWB research thus throws any and every potential influence on happiness into a function together, wraps this in a reporting function, and proceeds to estimate parameters empirically.

Implicitly, then, there is a mental quantity representing experienced happiness, h , which is explicable by a vector of characteristics \mathbf{x} , and can be evaluated and reported as a quantity r : $h = H(\mathbf{x})$, $r = R(h)$. To be a useful insight into h , the form of the reporting function $R(\cdot)$ must satisfy $R' > 0$ or at least $R' \geq 0$. Usually, both $H(\cdot)$ and $R(\cdot)$ must be the same across individuals (Senik, 2005). $R(\cdot)$ must also be assumed independent of \mathbf{x} except as mediated by $H(\cdot)$.

Various further assumptions are necessary according to the method of analysis. $R(\cdot)$ is generally bounded between a lower and upper limit and, depending on our precise SWB concept, may in fact represent a series of psychological processes including recollection and aggregation of experiences through time; it is generally assumed that $R(H(\mathbf{x}))$ can be modelled as a linear or log-linear function of \mathbf{x} ; analysis of panel data assumes stability of $H(\cdot)$ and $R(\cdot)$ over time; use of OLS, or of r values averaged across individuals, assumes cardinality; and so on. The assumptions required by different methods of analysis are discussed further in subsection 2.2.

The vector \mathbf{x} can include just about anything, but economists have been especially interested in relative income parameters (both time-lagged and peer incomes: $y_{i,t} - y_{i,t-1}$, $y_i - \bar{y}$) and macroeconomic variables, including unemployment, inflation, and governance. Most of the happiness research published in mainstream economics journals to date has concerned itself with these explanatory factors, but there is perhaps increasing interest in other influences, such as indicators of social and environmental capital.

There is no easy mapping between the PS concept of utility and SWB measures of happiness. Neither is defined explicitly; each is a black box, only truly comprehensible to the individual concerned—if even to them—and then perhaps only tacitly. Utility is whatever individuals (prospectively) behave as if to maximise; SWB is whatever individuals understand by the question they are asked, used (generally retrospectively) as a guide to recollecting, filtering, aggregating and reporting their experience. Intuitively, some understanding of happiness probably is what most people are trying to maximise, and SWB measures are sometimes described as measures of 'experienced' utility, in contrast to the expected or 'decision' utility yielded by the PS approach (Kahneman et al., 1997; Kahneman & Sugden, 2005). But while this does capture a useful distinction between the two quantities, it would be wrong to take them, as this terminology might imply, as simply prospective and retrospective versions of an equivalent metric.⁶ Van Praag (1991) and Clark et al. (2008b) discuss this relationship in greater depth.

2 What do happiness economists do?

Having considered broadly what is meant by happiness economics, this section asks: how does research in happiness economics proceed?

⁶Although compare (Rayo & Becker, 2007b, 487): "we consider that maximising happiness is closely linked, if not identical, to maximising utility in the standard economic way".

2.1 Measuring happiness

SWB data consist, more or less by definition, of the aggregated self-reports of individuals—what people say about themselves when asked.⁷ Widely used data sets with wellbeing items include those from the World Values Survey, European Social Survey, German Socio-Economic Panel and British Household Panel Survey.

As noted at the end of [subsection 1.1](#), what exactly people report must depend on the questions that are asked of them and on the interpretations they give these. This simple observation raises a number of issues.

2.1.1 Concepts and terminology

This paper has up to this point contrasted SWB with other accounts of or approaches to wellbeing and happiness. But SWB is not a monolithic concept; it is itself an umbrella term for a number of distinct ways of conceiving of a person's wellbeing. Many different survey questions have been taken as measuring SWB in the literature to date: the World Database of Happiness catalogues over a thousand (Veenhoven, nd). These questions differ in a number of respects, including the breadth and timescale of experience encompassed, and the words in which the idea of wellbeing is expressed (which have included, for example: happiness; satisfaction with one's life situation, with life as a whole, or with quality of life; enjoyment of life; contentment; and many other variants).

Authors generally seem to have reflected rather little on the wide range of terms employed in research under the SWB banner, and to have shown a perhaps surprising lack of unease about this.⁸ Empirically, studies asking different questions have produced results that are generally fairly consistent with each other. But the use of different questions does make comparison of findings between studies problematic: it is difficult to be sure that any differences are not simply the result of nuances in the terms (and therefore concepts) in the questions.

Communication and policy considerations may be one reason for the use of different terms, and the terminology used in reporting research may not match that used in the research itself. For example, a New Economics Foundation policy workshop identified "confusion/conflation with happiness" as a threat to the use of wellbeing in policy (Thompson & Marks, 2008, p. 24) even though in the report of this same workshop those terms are used interchangeably and without clarification. On the other hand, 'happiness' seems to be used more widely than 'wellbeing' in media reporting of SWB research. Hence a study that actually asked respondents about 'life satisfaction' may be reported in the media as dealing with 'happiness' and to policy-makers as a 'wellbeing' study.

As noted in [section 1](#), certain terms are used interchangeably in this paper too—since essentially all the literature does so, it now appears impractical to do otherwise.

⁷Studies of happiness have also used data based on reports by others (the subjects' friends or colleagues, or mental health professionals, for example) and on subjects' observed behaviour (such as smiling, or even suicide attempts). Whether these measures constitute *subjective* wellbeing data is debatable. On the one hand, they are certainly not objective data as understood within a strict objective list or preference satisfaction approach—for example, data on suicide attempts would not be relevant under these approaches to wellbeing, since suicide may be attempted by people who are objectively well provided for, and well able to satisfy their consumption preferences. On the other, they are clearly not subjective in the sense of data arising more or less directly from subjects' experiences and perceptions of their own mental states—even if they may still be powerful indicators of those experiences and perceptions.

⁸Even some who have noted the inconsistency of terminology in a context rather critical of SWB have not flagged it as a potential issue (e.g. Johns & Ormerod, 2007, 22).

2.1.2 Domains and timescales

SWB can be measured using either single- or multiple-item scales. Multiple-item scales pose the question whether and how to aggregate the individual items. Some multiple-item scales focus purely on the evaluative aspects of SWB, asking about satisfaction in different life domains (work, relationships, finances, and so on—e.g. Cummins et al., 2003). Others take a wider view, with items covering evaluative, hedonic and eudaimonic aspects (e.g. Huppert et al., 2009). Still others, such as the General Health Questionnaire (GHQ), focus more on symptoms of unhappiness or psychological distress (e.g. Clark & Oswald, 1994).

So far, research within economics has tended overwhelmingly to focus on single-item measures. On a pragmatic level, single-item measures have good data availability: they are included in several major surveys. Analysing a unitary quantity of something utility-like is familiar economic territory, and makes monetary valuation straightforward. And use of a single-item scale may be justified by the contention that the individual concerned is best placed to aggregate all the different aspects of his or her own wellbeing. On the other hand, single-item measures have poorer reliability (Huppert et al., 2009) and, outside the discipline at least, not everyone is happy with an opaque and individualised aggregation function (for example, Michalos—2008, 360—writes that “moving Pandora’s Box of aggregation problems from the visible world to the invisible Black Box inside people’s heads does not strike me as a progressive research programme”).

SWB can also be measured over various timescales. In the data most commonly used by economists, respondents are asked about the vague present (“these days”, “nowadays”, “the last few weeks”, and so on). These data are termed “retrospective assessments” by Kahneman & Krueger (2006), although in some cases future expectations could arguably be relevant too. In either case, there is a problematic lack of clarity as to what exactly is to be assessed on the time dimension. Even where the timescale of the assessment is more precise,⁹ the recollection and aggregation of experiences has been shown to be systematically distorted—such as by neglect of experiences’ duration (Kahneman & Thaler, 2006)—relative to a simple average of momentary utilities. On the other hand, in respect of this benchmark, it could also be argued that a recollected and aggregated assessment is as valid a measure of SWB as a perfect integral of momentary experiences over time: humans do not live exclusively in the immediate present.

As implied by the above, SWB measures have been devised to approximate the average or integral of individuals’ momentary utilities too (Kahneman, 1999, p. 5). With a flavour of Edgeworth’s ‘hedonimeter’, these come from either Experience Sampling Method (ESM) or Day Reconstruction Method (DRM) studies. In ESM studies, participants are signalled a number of times over a given period—say, eight times a day, for seven days—and are asked about aspects of their mental state, where they are, what they are doing, and who they are with (Hektner et al., 2007). Especially in the medical literature, the term Ecological Momentary Assessment (EMA) describes a broad family of similar methodologies (Shiffman et al., 2008; Smyth & Stone, 2003). The logistics of supplying and requiring participants to carry handheld computers or pre-printed response forms have until recently limited the scale of ESM studies, but technological developments look set to obviate this issue (e.g. Collins et al., 2003; Goodwin et al., 2008), and large-scale ESM studies using participants’ own mobile devices have recently been set up at Harvard (Killingsworth & Gilbert, 2010) and, by the author, at the London School of Economics (these studies are described at <http://trackyourhappiness.org> and <http://mappiness.org.uk>).

DRM studies aim to collect similar information to ESM, but to do so more efficiently and less intrusively. These studies simply ask participants to break the previous day into episodes and to report the context of, and their feelings during, each episode. DRM data may be subject to greater recall bias than ESM data—which is regarded as the “gold standard” here—but it also offers richer information on time use, given a fixed period of data collection, since it deals in periods rather than moments (Kahneman et al., 2004b).

⁹For example, some of the items devised by Huppert et al. (2009) ask specifically about the past week.

Finally, if it is judged most important to increase the wellbeing of those who have less of it (potentially for good philosophical and political reasons), this moment-in-time data is sometimes reduced to a measure of the proportion of time respondents report spending below some predefined threshold. This measure has been dubbed the U-Index (Kahneman & Krueger, 2006).

2.1.3 Interpretation and response

Regardless of the terminology used and the timescale asked about, what a respondent reports will depend on his or her own understanding of the question. Random variation between different individuals' interpretations—as long as they are not wholly dissimilar—may simply be regarded as a source of measurement error. The extent of this error may depend partly on the choice of terms, since some appear more capable of multiple interpretations than others (the word 'happy' seems especially problematic, capable of expressing anything from momentary "smiley-face feelings" to self-realisation, flourishing and achievement—Annas, 2004). Multi-item scales, using a variety of terms, may help to reduce it.

Culture and language Non-random variation in interpretations represents a more serious challenge to the validity of SWB research. An obvious source of such variation is individuals' cultural and linguistic backgrounds. And there are identifiable cultural groupings in SWB ratings: historically communist countries may tend to lower scores; historically Protestant, island and south-American nations to higher ones (Inglehart & Klingemann, 2003; Marks et al., 2006a).

Given ratings' subjectivity, it is arguably impossible to determine how far cultural differences in ratings reflect varying levels of actual, experienced SWB. However, different interpretation and reporting styles seem likely to be at least part of the story. While there may be some simple, universal concepts, 'happy', 'satisfied' and 'wellbeing' are probably not among them; for example, 'happy' appears weaker in meaning than straightforward translations in some other European languages—including the French 'heureux', Italian 'felice' and Russian 'sčastlivyj' (Wierzbicka, 2004). In some cultures it may also be important to distinguish public values from private values (Littlewood, 2008, p. 3).¹⁰ More generally, the potential for social desirability biases needs to be acknowledged and, ideally, minimised (e.g. MacCulloch & Di Tella, 2005). For example, in some cultures it may be socially undesirable to be unhappy, or even to be too happy. In relation to East Asian cultures Uchida et al. (2004, 226) write that "emphasizing a success of the self may lead to jealousy and envy by others. The personal form of happiness is therefore often perceived to be tainted and incomplete".

This all makes naïve comparisons of SWB between nations—and perhaps even between different ethnic groups within nations—problematic. Unfortunately, this has not stopped such comparisons being drawn. Inglehart & Klingemann (2003), for example, describe surprisingly large differences in SWB ratings between European countries in a paper that barely admits the possibility of cultural variability in interpretation and reporting.¹¹

¹⁰Littlewood's example concerns "blood feuding clans in Northern Albania where the feud is regarded as a normal, even laudable and enjoyable, enterprise: families with a recently-killed member appeared to mourn only briefly and slightly... But on close questioning the women of the community, while subscribing to the public male ethos of the feud, would privately confide their distress".

¹¹These authors dismiss the possibility of "translation problems" on the basis that the German-, Italian- and French-speaking Swiss report different levels of happiness than the Germans, Italians and French (Inglehart & Klingemann, 2003, 167). All this fact really demonstrates is that the differences in reported happiness between European nations are not *exclusively* due to language. Using similar data, Layard (2003) notes that all three Swiss groups report similar levels of happiness to each other. But this does not rule out the possibility that differences in both their actual levels of happiness *and* their interpretations of the question serve to cancel each other out. And even if that were ruled out, extrapolating from this evidence to the much greater diversity of all the world's cultures seems weak, at best.

On the other hand, there are ways around this issue. Studies limited to relatively local areas or relatively homogeneous cultural groups can produce interesting and valid data. Panel data can allow comparative analysis of SWB trends over time (at least if we can assume certain commonalities in the shapes of different countries' reporting functions).¹² Biological markers such as saliva cortisol levels or heart rate—to be discussed in [section 3](#)—might help us to calibrate subjective responses cross-culturally (Layard, 2010). And the use of anchoring vignettes (King et al., 2004), which attempt to correct for differences in reporting functions between individuals, may prove informative, at least for the less subjective end of the spectrum of SWB questions.

Response bias The probability of obtaining any response to a SWB question may also vary from individual to individual. SWB questions generally receive very few missing responses relative to other survey items (e.g. Ferrer-i-Carbonell & Frijters, 2004, p. 654), but the surveys of which they are a part tend, like all surveys, to attract response rates well short of 100%. Those who do not respond may be different in ways that are important for our understanding of SWB, at least at the population level. In the notation used above, the probability of even observing R may depend on x . For example, it is plausible that depressed people would be less likely to participate in social research, and that standard telephone and face-to-face survey methods might well attract respondents who are unrepresentatively lonely and/or trusting, both of which characteristics tend to correlate highly with SWB ratings.

2.1.4 Dimensionality and boundedness

Some writers have questioned whether SWB is reducible to a single dimension, and thus whether it is meaningful to ask—as single-item SWB questions often do—for a global evaluation of happiness, wellbeing, or satisfaction with life. Annas (2004, p. 46) gives an example: “Suppose that you have just won the Nobel Prize; this surely merits the smiliest face. But suppose also that you have just lost your family in a car crash; this surely warrants the frowniest face. So, how happy are you? There is no coherent answer”. But although such an extreme example illustrates the problem clearly, real experience is rarely like this: affect is much more typically bipolar (happy – sad) (Larsen et al., 2001),¹³ and the great majority of people have no difficulty in answering along one dimension (van Praag & Ferrer-i-Carbonell, 2008, p. 80).

The boundedness of typical SWB scales has also been criticised. Wilkinson (2007, p. 10), for instance, imagines: “there will be a point at which the entire population has finally climbed into the top happiness bracket. From that moment forward, average happiness must remain flat, simply as an artifact of the bounded scale, even if people continue to become happier”. Philosophically, such an argument presupposes that the *experience* of SWB is *not* bounded, and that people cannot therefore know how happy it is possible to become—an assumption that is at least open to doubt (Thompson & Marks, 2008, p. 18). This issue is also raised on a more practical level, in relation to analyses of longitudinal data where a bounded dependent SWB variable is regressed on potentially unbounded explanatory variables such as GDP. Johns & Ormerod (2007, p. 33), like Wilkinson, argue that a genuine correlation between experienced SWB and GDP could go undetected in such analyses because of a ceiling effect, and suggest that this could be behind the SWB flat-line in Easterlin's seminal paper on the subject (1974).

¹²However data from successive time periods could be unreliable over the long term if the meanings of words are not fixed. For example, Carlyle noted that economics was not a “gay science” (1849, 530); we would not now consider asking respondents how gay they feel. There is evidence of change in the meaning of ‘wellbeing’ too (Littlewood, 2008, 2–3).

¹³Larsen et al. (2001, 684) explain: “positive and negative affect are separable and... mixed feelings of happiness and sadness can co-occur... [M]any participants surveyed immediately after watching the film *Life Is Beautiful*, moving out of their dormitories, or graduating from college felt both happy and sad... [A]lthough affective experience may typically be bipolar, the underlying processes, and occasionally the resulting experience of emotion, are better characterized as bivariate.”

There are a number of counter-arguments to this: first, bounded variables can and do show time trends (fear of crime and social trust, for example, have varied over the recent past—[Dittmann, 2005](#); [Putnam, 1995](#)); current data (in this case, ESS Round 3) place median SWB ratings at 7 out of 10 and have fewer than 1 in 10 respondents answering in the top bracket, which suggests substantial room for upward movement; and analysis of time-trends against unbounded indicators is just one of many strands of SWB research. Finally, *unbounded* SWB scales are not impossible in principle—for example, marketers sometimes use an ‘unbounded write-in scale’ where respondents make a number of marks of their choosing ([Stapleton & Edmonds, 2005](#)); alternatively, a scale could be developed using reference points that are not at the extremes.

2.2 Analysing happiness

As discussed in [subsection 1.1](#), the basic model underlying most SWB research relates an individual’s reported happiness r to a vector of characteristics \mathbf{x} , via a happiness or utility function H and a reporting function R : $r = R(h)$, $h = H(\mathbf{x})$. The reporting and the underlying experience of happiness can rarely be disentangled, so R and H are commonly collapsed into a single function mapping \mathbf{x} to r .

The techniques used to estimate a particular model from the data depend on three factors. First, what questions are to be addressed? Economists are usually interested in determining whether and how much particular factors affect SWB—commonly with a special focus on income measures and (un)employment, while controlling for other impacts. Second, what data sets are available? Are these at the micro (individual) level, or aggregated (for example, by country); do they comprise cross-sectional, time-series, or panel data; what SWB items are included, what scales are the responses given on, and what other data is available for analysis? Third, and finally, what assumptions can reasonably be made regarding the SWB variables and the explanatory variables (both observed and unobserved)?

Of course these factors, and the statistical methods that follow from them, are in practice at least partially co-determined. In particular, one element of the development of the field has been the development or application of new statistical techniques in order to relax some of the more restrictive (and potentially unrealistic) assumptions required by earlier techniques.

2.2.1 SWB variable treatment and econometric models

The interpretation of SWB responses is one of the key subjects about which differing assumptions can be made. There are three main assumptions, of increasing restrictiveness, which are associated with a variety of different models ([Ferrer-i-Carbonell & Frijters, 2004](#)):

- A1. Reported SWB is a positive monotonic transformation of an unobservable underlying quantity of interest: $R' > 0$.
- A2. Reported SWB is ordinally comparable between people: if $r_i > r_j$ then $h_i > h_j$, where subscripts i and j represent different individuals.
- A3. Reported SWB is cardinally comparable between people: $h_i - h_j = \omega(r_i, r_j)$, where the function $\omega(\cdot)$ is known up to a multiplicative constant; $h_i - h_j = r_i - r_j$ is commonly assumed.

Cardinal SWB comparability Under the cardinality assumption, A3, simple OLS regressions are appropriate.¹⁴ If a panel data set is available, the use of OLS makes it straightforward

¹⁴Alternatively, if respondents are thought to answer scale questions by the rounding up or down of a continuous latent quantity, interval regression would be suitable ([van Praag & Ferrer-i-Carbonell, 2008, 36](#)). For example, a

to include individual fixed effects (or use first differencing) to control for time-invariant unobserved influences on SWB (Ferrer-i-Carbonell & Frijters, 2004).

OLS models have been widely used in the psychology literature, but economists have tended to turn to them only when the use of aggregated (mean) SWB ratings has forced them to assume cardinality in any case (*ibid.*)—see, for instance, Welsch (2006)—or when the OLS results have been shown to be qualitatively indistinguishable from the results of models not requiring cardinality—as in the case of Moro et al. (2008), for example. In the latter case, OLS models may be preferred because of the straightforward interpretation of the coefficients.

The subjectivity of SWB makes it difficult to assess the realism of the cardinality assumption. Schwarz (1995) argues that respondents strive to make responses informative, and van Praag (1991) argues that respondents may try to distribute reporting categories evenly with respect to the possible values of an underlying, unobservable quantity in order to maximise the information conveyed (Ferrer-i-Carbonell & Frijters, 2004). Although these psychological arguments are undoubtedly highly speculative, results obtained using models that do and models that do not assume cardinality are usually extremely similar (*ibid.*).

Ordinal SWB comparability Relaxing the assumption of cardinality and turning to ordinal comparability, A2, many researchers have used the standard ordered probit and logit models. These models treat ordinal data ($r = 1 \dots J$) as the discrete expression of a continuous latent variable of arbitrary scale. On this basis they estimate two sets of parameters using maximum likelihood: first, a coefficient vector used to predict the latent variable from the explanatory variable vector (\mathbf{x}); and second, a set of $J - 1$ cut-points, which are the values of the latent variable where there is a change in the observed discrete rating.

In empirical economic research with ordinal data, including SWB research, these models “fully dominate the literature” (Winkelmann & Boes, 2009, p. 192). These models do not lend themselves easily to the inclusion of individual fixed effects for panel data (to control for heterogeneity in individual happiness and/or reporting functions), however; fixed effects specifications have therefore been rather little used in the economic literature to date (Ferrer-i-Carbonell & Frijters, 2004).

Generalised ordered models The standard ordered models assume (as OLS does) that the relative magnitudes of the effects of each of the explanatory variables are constant across the distribution of outcomes (Boes & Winkelmann, 2006a, p. 5). For example, the impact of income relative to the impact of marriage or divorce must be the same for those with low and high SWB levels alike. This is variously termed the proportional odds, parallel lines or parallel regression assumption.

Boes & Winkelmann (2006a) argue that single-scale SWB measures may be understood as measuring both unhappiness (‘negative wellbeing’) at the lower end and happiness (‘positive wellbeing’) at the higher end¹⁵ and that, since different factors may have different effects on these two dimensions, the parallel regression assumption might need to be relaxed. While the multinomial logit could be employed for this purpose, discarding information about the ordering of the response scale, this is inefficient. Instead, researchers have turned to generalised ordered response models (Williams, 2006; Boes & Winkelmann, 2004, 2006b; Boes, 2007; Fu, 1997), principally the generalised ordered logit and probit.¹⁶

These generalised models effectively estimate a separate vector of coefficients for each cut-point of the latent variable (Boes, 2007, p. 126); they give results that are similar to those of a series of

response of 9 would suggest an underlying value for interval regression of 8.5 – 9.5; a response of 10 would suggest an underlying value of 9.5 or higher. Interval regression has not been widely used in the literature, however.

¹⁵This recalls the discussion in subsection 2.1.4.

¹⁶Boes & Winkelmann (2004; 2006b) and Winkelmann & Boes (2009) also describe a sequential ordered model and a finite mixture model; these are not discussed further here.

binary logits or probits, taking each response level in turn and grouping responses on either side of it (Williams, 2006, p. 59).¹⁷ A *partial* proportional odds model is also possible, and potentially the most useful variant: this is effectively a hybrid of the standard and generalised models, in which the parallel regression assumption is imposed on certain explanatory variables, which then take a single coefficient throughout the outcome distribution, but not on others (this can be automated by a stepwise process using likelihood-ratio tests). Applications of this model to BHPS and GSOEP data (with the inclusion, in some cases, of random effects) potentially vindicate concern over the parallel regression assumption; they suggest, amongst other things, that higher incomes may have a significant *negative* effect on the probability of answering in the very topmost SWB category (Mentzakis & Moro, 2009; Boes & Winkelmann, 2004, 2006a; Winkelmann & Boes, 2009).

Probit-adapted OLS Van Praag & Ferrer-i-Carbonell (2008, p. 28) note that the standard ordered logit and probit models implicitly cardinalise SWB through the cardinal continuous latent variable underlying them, and on this basis suggest a method they term probit OLS or probit-adapted OLS. The probit-adapted OLS is a simple OLS model using a ‘rough cardinalisation’ of the ordinal SWB variable: a transformation such that the new dependent variable takes the conditional mean (given the original ordinal rating) of a standardised normally-distributed continuous variable, calculated based on the frequencies of the ordinal ratings in the sample (Cornelißen, 2006, provides a worked example). Where the assumption of normality in the continuous variable holds—and in van Praag & Ferrer-i-Carbonell’s examples, the results suggest it does—probit-adapted OLS is equivalent to the ordered probit. Its advantage is that it is quicker to compute and can be used as a building block in more complex models. It does not appear to have been very widely used, although its results are reported by Luechinger (2009) and Stevenson & Wolfers (2008a).

Limited SWB comparability Abandoning or weakening the assumption of ordinal comparability is possible using techniques only relatively recently applied to SWB (there appears to be significant potential for the wider application of all of the following methods).

Ferrer-i-Carbonell & Frijters (2004) develop and apply an ordered logit model with fixed individual effects and individual-specific thresholds. They find that inclusion of time-invariant individual effects qualitatively changes the results of their model; this contradicts the finding of Clark & Oswald (2002, p. 12), whose cardinal models suggest that “cross-section and panel equations seem to have similar general structures”.

Clark et al. (2005) assume that different groups or types of individuals have different happiness and/or reporting functions (which cannot be separated using their data), and hence estimate an ordered latent class model in which the classes vary both in the marginal contribution of income to SWB and in the cut-points used to translate a latent continuous variable into observed SWB ratings. Their data identify 4 or 5 classes with significantly different reported happiness functions, suggesting that inter-individual heterogeneity is more complicated than can be fully modelled by simple fixed effects.

Ferrer-i-Carbonell (2005) estimates SWB effects of an individual’s own and reference group income using an ordered probit model with individual random effects (allowing for correlation between the random effects and a subset of explanatory variables using the Mundlak correction). The results are consistent with findings from cross-sectional methods: own income has a small but significant effect on SWB.

¹⁷For clarification, this grouping would proceed as follows. First, the lowest response ($r = 1$) is contrasted with all higher ones ($r = 2 \dots J$); next, the lowest two responses ($r = 1, 2$) are contrasted with all higher ones ($r = 3 \dots J$); and so on. Finally, all responses but the highest ($r = 1 \dots J - 1$) are contrasted with the highest one ($r = J$).

Anchoring vignettes Data sets in which anchoring vignette items are included alongside an SWB self-assessment permit two further approaches to correcting for differing reporting functions (R) across individuals, given two key assumptions (King et al., 2004). The assumptions are: vignette equivalence, which means different respondents need to understand the vignettes in the same way; and response consistency, which means that respondents need to use the response scale for the vignettes and for their self-assessment in the same way.

A non-parametric transformation of the original ordinal SWB response into a new (potentially vector-valued) ordinal variable can be made (e.g. Lau, 2007). This can then be analysed with a variant of the standard ordered logit or probit which allows vector-valued ordinal responses. Alternatively, a parametric technique—compound hierarchical ordered probit (chopit)—can be used. This predicts individuals’ cut-points on a latent continuous variable based on both their vignette responses and the values of independent variables, and does not require that every respondent answer the vignette items (Rabe-Hesketh & Skrondal, 2002; King et al., 2004).

Using the chopit model with the Survey of Health, Ageing and Retirement in Europe (SHARE) data set—the only known study incorporating vignettes for SWB—Angelini et al. (2008) find that higher life satisfaction ratings among Danish as compared to Italian retirees may be largely explained by differing interpretations of the response scale.

2.2.2 Explanatory variable treatment

While the nature and appropriate treatment of the SWB data has been debated at length, comparatively little attention has been given to the treatment of explanatory factors in SWB research. Explanatory variables are generally entered into models in a linear specification, save for income (usually logged) and age (usually in linear and quadratic forms). Most researchers have also assumed the effects of different explanatory variables to be independent, and potential interactions have not been widely explored (for example, could the SWB effect of having—or not having—children be partly contingent on age and gender?).¹⁸

Although several analyses incorporate spatially-derived data (e.g. Luechinger, 2009; MacKerron & Mourato, 2009; Brereton et al., 2008), only one so far seems to have attempted the econometric modelling of any spatial effects (Stanca, 2010). Relevant spatial models could include: spatial explanatory variables models (in which a person’s SWB is correlated with other observed characteristics of nearby individuals); spatial error models (in which SWB is correlated with unobserved characteristics of nearby individuals); spatial lag models (in which SWB is correlated with the SWB of nearby individuals); and models accounting for spatial heterogeneity in the relationships between variables. The lack of use of spatial models in economic SWB research to date may be at least partly explained by the relative scarcity of data that are spatially referenced at an appropriately high resolution. Spatial models could also be applied to relations in conceptual spaces, such as social networks (where by ‘nearby’, one means ‘well known’ or ‘strongly related’), as they have begun to be in the medical literature (Fowler & Christakis, 2008; Christakis & Fowler, 2009).

Finally, the degree of inter-correlation between many of the more important factors influencing SWB (such as age, income and employment) might suggest the use of techniques such as structural equation modelling (SEM) or principal components analysis (PCA), but these have not been widely used (although for SEM using domain satisfactions data, see van Praag et al., 2003).

¹⁸Yang (2008b; 2008a) looks at interactions with life-course variables such as age and would represent an exception here, but writes outside of economics.

2.2.3 Causality

Establishing causality, especially with cross-sectional data, is a particularly difficult problem in happiness research. Happiness and wellbeing are such all-encompassing ideas that it is often difficult to be sure that happiness is not a cause of another variable (rather than, or as well as, being caused by it); or that an unobserved variable is not a cause of happiness (leading to omitted variables bias); or even that an *observed* variable does not cause happiness (for the purposes of an instrumental variables treatment, for example).

Studies using aggregated data—usually mean SWB ratings at a whole-country level alongside other aggregated statistics such as GDP, or mean air pollution levels—are potentially subject to the ‘ecological fallacy’ (the spurious inference of individual-level characteristics from group-level characteristics) (Robinson, 1950), and face particular difficulties in establishing causality. And individual-level data sets, which have usually not been collected specifically for the study of SWB, generally omit some things which might reasonably be expected to have a significant impact—such as personality indicators, childhood experiences, traumatic events, or being in a relationship (even if unmarried)—and which might not be independent of the variables that are the focus of the investigation.

Fixed effects treatments with panel data can of course help with some of these factors—for example, genetic elements of SWB are fixed by definition, and other personality traits can be reasonably assumed to be broadly stable—but even with panel data, omitted time-variant variables may be a problem. For example, “income movements and wellbeing movements may merely be linked because of omitted variables (such as seniority in the workplace)” (Gardner & Oswald, 2007, p. 50). As usual, the most robust evidence of causality is provided by natural experiments, in the form of exogenous shocks such as lottery wins (*ibid.*) or political shifts (Frijters et al., 2004). Also as usual, natural experiments are not easy to identify, although the conclusions of the two studies cited, which focus on income, are encouragingly consistent with the broad consensus in the literature.

3 Is happiness valid economics?

Despite the growth of SWB research within economics, it is not currently a fully mainstream approach.¹⁹ It continues to attract varying degrees of scepticism from within the PS tradition—perhaps unsurprisingly, given the historical roots of the two approaches. For example, Smith (2008) writes: “I am ‘unhappy’ with happiness economics... It is amazing to me that the best economics journals have devoted so much attention to what Dan Hamermesh (2004) has previously described as ‘rather silly’ analyses”. Most criticism can be classified into three major levels, which are decreasingly fundamental: the epistemological, the practical, and the disciplinary.

First, epistemologically, it is held that subjective experiences are ultimately unmeasurable and incommensurable: I can never prove that my experience of “yellow” is the same as yours (Gilbert, 2006), and the same goes for happiness concepts of all kinds. This, of course, is the very same observation that turned 19th century economists away from subjective accounts of wellbeing. In principle, it is inescapable; in practice, for much of the time, it seems to matter very little.

There are many sources of evidence that SWB reports are meaningful, and that different people mean similar things by them. Current happiness or satisfaction is a strong predictor of future behaviour (Clark et al., 2008b, p. 136). It correlates strongly with objective indicators including neural activity (measured with MRI), heart rate, blood pressure, smiling and

¹⁹Please note that the ‘mainstream’ is not here equated directly with the neo-classical orthodoxy presented in caricature above, nor is it suggested that it is a single, static, or easily-defined quantity; like the core of any discipline, it is in constant flux (Colander et al., 2004).

suicide, and subjective data including recall of positive and negative events and others' SWB assessments—MacCulloch & Di Tella (2005, pp. 370–371) summarise these connections concisely. State-by-state variation in US SWB levels is also substantially correlated with compensating differentials calculated using objective quality-of-life data (Oswald & Wu, 2010; Gabriel et al., 2003). Especially given our evolutionary/genetic similarity, none of this should seem terribly surprising (Veenhoven, 2004).

Second, practically, it is argued that even if it is possible to use SWB data, various measurement issues will bias the results, particularly where a subjective measure is used as a dependent variable. Bertrand & Mullainathan (2001) offer a clear statement of this position; they are especially pessimistic, in terms of the notation introduced in subsection 1.1, regarding the independence of $R(\cdot)$ and x . The availability of longitudinal or panel data offers some reassurance in relation to such criticism, however, since individual fixed effects can be used to control for the time-invariant elements of any such relationship (Frey & Stutzer, 2002b).

And third, in disciplinary terms, it is suggested that while SWB analyses represent a valid and even interesting line of inquiry, it is not one to be pursued within economics. Hamermesh (2004) elaborates: “we should not abandon our comparative advantage—our frameworks for analysing maximising behaviour by individuals and how that behaviour affects individual and group outcomes”. Conversely, happiness economics has drawn interest from those expressly calling for a broadening of disciplinary scope: pluralist, heterodox and ‘post-autistic’ movements (e.g. Guerrien, 2004; Fullbrook, 2005; George, 2007; Kaskarelis, 2007).

Hamermesh (possibly alongside some of the more radical post-autists) arguably presents a false choice here. Accepting SWB research as a useful endeavour need not imply abandoning other analytical frameworks (Diener et al., 2009, p. 3). Indeed, one of the strongest arguments in favour of the application of SWB methods is that their strengths *and* weaknesses are quite different from—and even complementary to—the strengths and weaknesses of methods recently favoured in the mainstream (Welsch & Kühling, 2009; Ott, 2010). For example, non-market valuation methods based on SWB scores require a quite different set of assumptions and simplifications than more established revealed- and stated-preference methods. They can therefore offer corroboration (or otherwise) of those other methods' results, or be applied where those methods' assumptions are plainly inapplicable.

Ultimately, the status of SWB research is a matter of shifting social consensus within the discipline; any attempt to put the issue on firmer ground appears likely to turn out rather circular (a problem that is concisely encapsulated in the popular definition of economics as ‘what economists do’—Backhouse et al., 1997, 2).

4 Who are the happiness economists?

There are not, or at least were not until recently, any dedicated ‘happiness economists’. Happiness economics has been done by people in various areas—and on various edges—of the discipline.²⁰ One may therefore ask which areas of economics, and which economists, have been most closely associated with which aspects. Three major areas are outlined below—as well as one area more notable by its absence from this field.

4.1 Macroeconomics: growth, national accounting, unemployment and taxation

As noted above, Easterlin's (1974) paper, “Does economic growth improve the human lot?”, is often cited as an early (re)introduction of SWB into economics. Connections between income and happiness at the national and international scales have since been an important strand of

²⁰In addition, of course, to being influenced by and indebted to those working in other disciplines, most notably psychology (e.g. Cantril, 1965).

happiness research (e.g. Oswald, 1997; Hagerty & Veenhoven, 2003; Blanchflower & Oswald, 2004; Brockmann et al., 2008), and one which has obviously close ties with work looking at income and happiness on the individual level (e.g. Easterlin, 2001; Boes & Winkelmann, 2006a; Layard et al., 2008). The precise nature of these connections remains a matter of some contention, though (Stevenson & Wolfers, 2008a).

The macro-level research has naturally also led to consideration of SWB as one of the alternatives—or complements—to GDP as an index of national or social 'progress' (e.g. Diener & Seligman, 2004; Kahneman et al., 2004a; Di Tella & MacCulloch, 2008). In this form—perhaps most famously championed by the Bhutanese government, with its measures of Gross National Happiness (GNH)—it has been of substantial interest to other governments and politicians (see section 6). SWB measures also feature within composite indicators such as the New Economics Foundation's 'Happy Planet Index' (Marks et al., 2006a; Thompson et al., 2007). Of course, any aggregated indicator of social well-being raises challenging questions in relation to social welfare functions and utilitarian ethics (again, see section 6).

Still at the macro level, the aggregate impacts of (un)employment, inflation and tax policy have been studied in some depth (e.g. Clark & Oswald, 1994; Layard, 2005b; Blanchflower, 2007; Clark et al., 2008a). Rivalry, habituation, and other psychological and sociological factors are involved in these effects, giving this work strong connections with behavioural economics.

4.2 Behavioural economics

Behavioural economics investigates how real economic actors actually behave (make decisions), and seeks to provide explanations—primarily psychological and sociological ones—as to why they behave as they do (e.g. Rabin, 2002). Neo-classical utility theory provides a baseline for comparison with empirical data: behavioural predictions based on rational individual (decision) utility maximisation. Behaviour may deviate from these predictions for reasons such as loss aversion, anchoring effects, and myopia (e.g. Hsee & Hastie, 2006; Kahneman & Thaler, 2006; Offer, 2006; Camerer et al., 2005).

Happiness economics provides an alternative baseline, allowing researchers to assess how far behaviour deviates from that which would appear to have maximised experienced utility or SWB. By recognising a distinction between decision and experienced utility, it permits analysis of a further reason for apparently sub-optimal behaviour: imperfections in individuals' ability to predict their own future experienced utility or SWB under different scenarios. Established examples of such imperfections include over-estimation of the extent to which one's future tastes will resemble one's current tastes ('projection bias'—Loewenstein et al., 2003), and failure to anticipate the extent of habituation to rises in one's income (Layard, 2005b). (The former may lead to over-consumption of durable goods, and the latter to excess pursuit of income and consumption in general, relative to the apparent SWB optima).

Experienced utility or SWB measures also enable behavioural economics to address questions beyond the scope of analyses limited to data on preferences revealed through choices, including examining the contexts of choice and the effects on (experienced) utility of choices made within different choice *sets* (Koszegi & Rabin, 2008). Such work can indicate, for example, that more choice is not always preferable in SWB terms (Schwartz et al., 2002).

4.3 Environmental and ecological economics

One interesting application of SWB data has been to non-market valuation. Estimated relationships between levels of an arbitrary good and SWB, and between SWB and income, can together be used to derive the good's marginal value. A particular strength of SWB-based valuation is its applicability to questions where little individual choice is involved, such as mental health or community life (Layard, 2010). Valuation using SWB has so far attracted

the attention of environmental economists in particular. The use of SWB for environmental valuation is thoroughly reviewed by [Welsch & Kühling \(2009\)](#) and [Ferreira & Moro \(2010\)](#).

Within *ecological* economics—which has, like happiness economics, been somewhat isolated from the economic mainstream to date ([Dasgupta, 2008](#))—SWB is of interest in part because it makes strong sustainability more palatable.²¹ Strong sustainability appears to require future economic growth to rely less on material goods, and/or to proceed at a slower (or even negative) rate ([Victor & Rosenbluth, 2007](#); [NEF, 2006](#)). Under the neo-classical PS model, growth in individual and national income is effectively synonymous with growth in individual utility and social welfare. The PS approach therefore appears to predict a rather dismal future under any feasible regime: reduced utility deriving from unintended ecological overshoot on the one hand; intentionally reduced growth, and therefore utility, on the other. But since, at least in theory, growth in SWB could be de-coupled from GDP growth, SWB might offer a theoretical route out of this dismal future ([Welsch, 2009](#); [Jackson, 2005](#); [Gowdy, 2005](#); [Dolan et al., 2006](#); [Marks et al., 2006b](#)).

To imagine such a way out requires an emphasis on non-income factors that utility theory typically assumes to be held constant, and which happiness research tends to find are strongly related to SWB, including family life, social ties and environmental quality. Ecological economists—as well as civil society groups, and policy-makers and their advisers—have therefore become increasingly interested in the relation of happiness to these factors. And ecological and environmental economists are understandably particularly interested in happiness in relation to environmental quality parameters (such as noise, air pollution and access to green spaces—e.g. [van Praag & Baarsma, 2005](#); [Welsch, 2006](#); [Welsch, 2007](#); [Brereton et al., 2008](#); [MacKerron & Mourato, 2009](#), [Luechinger, 2009](#); [Levinson, 2009](#)), to environmental attitudes and behaviours ([Brown & Kasser, 2005](#); [Ferrer-i-Carbonell & Gowdy, 2007](#)), and to the potential disconnection between consumption and well-being (e.g. [Csikszentmihalyi, 2000](#); [Sanne, 2002](#); [Layard, 2005a](#); [Scitovsky, 1977](#)).²²

4.4 Others

Of course, happiness work has not been exclusive to these areas. For example, the work of the 'Leyden school', led by Bernard van Praag and Arie Kapteyn at Leyden university from the early 1970s (e.g. [van Praag, 1968](#); [van Praag, 1971](#); [Praag & Kapteyn, 1973](#)), is sometimes taken to represent a precursor of or complement to more recent work on SWB (e.g. [van Praag, 2006](#)). Although the Leyden school's primary focus has been on financial satisfaction, it has also investigated broader life satisfaction measures—as commonly employed in SWB research—and more general methodological issues around subjective response data (e.g. [van Soest et al., 2007](#); [van Praag & Ferrer-i-Carbonell, 2008](#)).

4.5 Development (or who *aren't* the happiness economists?)

One area of the discipline which has *not* been a significant incubator for happiness research, despite a shared scepticism regarding the sufficiency of income- or consumption-based welfare indicators, is development economics.

²¹Strong sustainability proposes limits to the substitutability of natural capital with other forms, and this implies that the scale of resource extraction and of the production of wastes requiring assimilation, relative to the biosphere, is of some importance (the rather unfashionably expressed proposition of 'limits to growth' ([Meadows et al., 1972](#); [Meadows et al., 2004](#)). It is increasingly widely accepted that the scale of certain activities—including in particular the emission of greenhouse gases—is already close to or beyond sustainable limits ([Millennium Ecosystem Assessment, 2005](#); [HM Treasury, 2006](#); [IPCC, 2007](#)).

²²The more radical end of the SWB and consumption literature, drawing on work from psychology, suggests that the economic and social system in developed economies is partly predicated on a level of structural or manufactured dissatisfaction, in more-or-less direct opposition to SWB. Such dissatisfaction, in which advertising plays an important role, helps to ensure that people remain motivated to consume (e.g. [Kasser, 2002](#); [Jackson, 2004](#); [Kasser et al., 2007](#)).

Recent development research has been increasingly influenced by the capability approach described by Sen and others. Capability relates to a person's positive freedom—envisaged as the range and quality of opportunities (or 'functionings') that a person both has reason to value and is able attain—and as such represents "an unusual intermediary between objective wellbeing and subjective wellbeing concepts" (Gasper, 2007, p. 351).

The problem of habituation or adaptation to bad circumstances (whether through simple conditioning or broader cultural or religious indoctrination) has largely been seen as precluding the use of SWB in development work: "inequalities and exploitations survive in the world through making allies out of the deprived and exploited. The underdog learns to bear the burden... Discontent is replaced by acceptance... the horrors look less terrible in the metric of utilities" (Sen, 1984, p. 309). However, it is possible that this position both overstates the problem of adaptation in relation to SWB and understates it in respect of capabilities (Clark, 2009). Some have even suggested that SWB could encompass rather than compete with capability in the evaluation of poverty (Kingdon & Knight, 2006).

Of the wellbeing ideas discussed in this paper, capability probably shares most with the objective lists account (see Dolan & White, 2007), and the relationship between capability and more subjective wellbeing accounts is not straightforward. Comim (2005, p. 162) sees a "remarkable" lack of mutual acknowledgement between the two literatures, and describes some key contrasts: while capability draws principally from moral and political philosophy, SWB has a primarily neurological/psychological/sociological base; capability assessments privilege qualitative aspects, whereas SWB's empirical approach is almost exclusively quantitative; and where capability admits of normative 'anchors' for assessing wellbeing—anchors such as autonomy and fairness—SWB has no obvious normative content beyond standard utilitarianism.

5 What does happiness economics tell us?

In general, the literature gives a fairly consistent picture of which factors have what associations with SWB. Where studies' findings do contrast, an important cause may be endogeneity, in that one (or both) of the studies fails to control for correlated explanatory factors.²³ Since several authors have reviewed the specific findings of the SWB literature in detail (e.g. Frey & Stutzer, 2002a; Dolan et al., 2008), this paper touches on the topic only briefly.

5.1 Income and wealth

The impact of income measures on SWB has, as stated above, been a major focus of the SWB literature. Researchers have investigated absolute income, income relative to others', and income relative to past income. Clark et al. (2008b) provide a detailed survey.

5.1.1 Absolute income

In general, absolute income is found to have a significant and positive association with individuals' SWB, but one whose magnitude is dwarfed by the effects of other factors (such as health, labour market status and marital status), at least in developed countries. There is perhaps surprisingly little discussion in the literature regarding the appropriate measure(s) of absolute income: this could be individual income, household income, or equalised household income (adjusted for household size and composition).

²³For example, the effects of gender and care-giving, of religion and sociable group attendance, of age and wealth, or equalised household income and family size, could each be correlated; hence a study that did not control for wealth might well report a different relationship between age and SWB than one that did.

On the assumption of decreasing marginal utility of income, most studies use a log income measure as the explanatory variable; Layard et al. (2008) assume that the relationship is log-like (in that the elasticity of marginal utility with respect to income is constant), but find that the marginal utility of income in fact declines somewhat *faster* than in proportion to the rise in income.²⁴ Studies making use of exogenous income variation have helped to establish that the apparent impact of income on SWB is at least partly causal (e.g. Gardner & Oswald, 2007).

Implications The relatively small effect of absolute income measures on happiness has been one of the more interesting findings in the literature and—given the emphasis placed on income in the standard economic account of wellbeing as preference satisfaction—one that has seemed to demand explanation. One line of reasoning is that consumption is ultimately the quantity of interest under the preference satisfaction approach, and that reported income is a noisy and biased proxy, excluding goods provided by the State and deferred consumption via savings (Clark et al., 2008b, p. 111). Based on Australian survey data including items on net worth, Headey & Wooden (2004, S24) conclude that wealth “is at least as important to well-being and ill-being as income”. An additional and more widely studied explanation is that the emphasis on absolute income within the preference satisfaction account neglects the more important contribution of relative income measures.

5.1.2 Past and relative income

Individuals’ own past incomes are negatively associated with their current SWB. This habituation or adaptation effect is very substantial—several studies find that adaptation eliminates more than half of the positive effect of income gains over the long term (Clark et al., 2008b, p. 111)—and is not fully anticipated by individuals (Layard, 2005b).

The income of an individual’s reference group has also been widely found to have a significantly negative effect on his or her SWB; in fact, reference group income may be substantially more important than own absolute income for individual happiness (e.g. Knight et al., 2009). It is generally assumed that this effect is caused by status concerns, sometimes described as rivalry or jealousy.

Social comparisons could also work in the opposite direction if the rising income of others were interpreted as a signal of one’s own future income possibilities. Senik (2008a) identifies such an effect (described as the effect of information or ambition) in transitional eastern European economies and the US. Jealousy and ambition effects are not mutually exclusive. Their relative importance may depend on perceived income mobility and uncertainty—higher levels of either implying a stronger ambition effect (*ibid.*)—and on which of an individual’s many potential reference groups is under consideration.

Most studies have defined the reference group as people who are similar on a specific set of characteristics (e.g. age, education, employment sector), using either cell averages (e.g. average income for individuals in the same age × education × employment sector category) or predicted incomes from a wage regression (Clark et al., 2008b). But reference groups can also be defined over a specific geographical area (e.g. Luttmer, 2005; Knight et al., 2009); as family members, friends, or work colleagues; or as explicitly reported by the SWB survey respondent (these approaches require more data, and have been less widely employed).

Implications Income habituation and (if individuals make social comparisons primarily within their own countries) rivalry both help to explain the Easterlin Paradox—that, although

²⁴They assume $u = \begin{cases} \frac{y^{1-\rho} - 1}{1-\rho} & \rho \neq 1 \\ \log y & \rho = 1 \end{cases}$ where u is utility and y income, and estimate $\rho = 1.26$.

individuals' incomes in cross-sectional studies are positively related to their SWB, for many countries there appears to be no corresponding effect of rising GDP on average national happiness figures over time. They also suggest that economic growth is of rather less importance than economists have traditionally assumed (but this is a contested issue—e.g. [Stevenson & Wolfers, 2008b](#)). Rivalry implies that visible consumption imposes a negative externality on others, while unanticipated habituation to income implies that people will choose to work more and take less leisure than would be rational for them. Both of these effects could inspire corrective taxation policies ([Layard, 2005b](#); see also [section 6](#)).

5.2 Other factors

Except where other citations are given, the comprehensive review by [Dolan et al. \(2008\)](#) provides further detail on the factors identified here.

Personal and demographic characteristics Good psychological and physical health both have a strong, positive effect on SWB, in line with intuition. Almost all studies find a U-shaped relationship between age and SWB, with the young and old being happiest. Where a gender difference is detected, women usually report slightly higher happiness. In the US, whites have on average higher SWB than African Americans. The impact of education varies between studies: in some it has no significant effect, while in others highest SWB is variously associated with lower, higher, and intermediate levels of education. Marriage and stable partnerships are highly positive for SWB (though the potential for omitted variables bias is large here); separation, divorce and widowhood are highly negative. Parental divorce is found in some (but not all) studies to reduce children's SWB in adulthood. Evidence on the effect on parents of having children is rather mixed, depending on the SWB measure, country, number and age of children, and parental situation.

Work and time use Unemployment has one of the largest negative impacts on SWB, independent of and larger than the associated material loss, reducing reported happiness by 5–15% (where scale cardinality is assumed). Evidence regarding the effects of different types and hours of employment is scarce and somewhat mixed. Commuting to work is associated with lower SWB levels, all other things being equal. Informal care-giving has a negative effect on SWB. Community involvement and volunteering may have a positive effect, but this finding is somewhat variable (depending on what is controlled for, and whether fixed effects are included). There is evidence, albeit somewhat limited, that physical activity promotes SWB. Finally, socialising and regularly attending church are both associated with higher SWB, while TV viewing goes with lower SWB ([Bruni & Stanca, 2008](#)).

Attitudes and beliefs Trust in 'most people', in the people in one's neighbourhood, and in institutions such as the police and government are all positive predictors of SWB (although great caution is required when regressing subjective variables on other subjective variables). Religious beliefs are generally associated with higher SWB too. Political views have not been widely studied, but may affect the impacts of other circumstances, including which party is in power ([MacCulloch & Di Tella, 2005](#)). Satisfaction in specific life domains tends to correlate positively with global SWB, and may partly or entirely mediate the effect of objective circumstances. SWB is also related to major personality traits such as extraversion and conscientiousness ([Weiss et al., 2008](#)).

Economic and political environment High unemployment rates may reduce SWB, although research is limited (high local unemployment rates may also ameliorate the impact of an

individual's own unemployment, however). Inflation may also have a negative influence on SWB, especially for those with right wing politics. Democracy, and particularly direct or participative democratic systems, may be positive for SWB. Evidence on income inequality is very mixed; its effect may depend partly on real or perceived mobility. There is little evidence concerning the effects of social insurance and the welfare state.

Natural and immediate environment Living in an unsafe or deprived area is, unsurprisingly, detrimental to SWB. Living in public housing may be negative for SWB (Brereton et al., 2008), but other aspects of housing quality seem to be little studied. Living in large cities appears unfavourable, while rural living has a positive impact in SWB terms (at least once lower rural incomes are controlled for). The evidence of environmental quality effects is still very limited, although several studies find a negative impact of air pollution on SWB. Some studies also find a link between climate and SWB, such that more extreme climates are detrimental.

The variation in SWB explained by all observed factors is well below 50% in all studies, which may partly owe to an important (and unobservable) genetic component: one study of identical twins raised apart suggests that up to half of the variation in SWB could be genetically based (Tellegen et al., 1988, p. 240).²⁵

6 What does this mean for public policy?

Happiness research has been a subject of substantial interest in the political and policy spheres. Following a 2007 conference hosted by the European Commission, European Parliament, Club of Rome, OECD and WWF, the OECD's *Measuring the Progress of Societies* and the European Commission's *Beyond GDP* projects aim to foster the development of non-GDP indicators, including happiness (Commission of the European Communities, 2009; <http://www.oecd.org/progress/>; <http://www.beyond-gdp.eu/>).

The French and German governments have commissioned recent reports on this topic (Stiglitz et al., 2009; Kroll & Meditz, 2009), with the French president subsequently instructing the national statistics agency to give greater weight to quality of life issues (Jolly, 2009). In Canada a network of governmental and non-governmental organisations is collaborating on a Canadian Index of Wellbeing (Institute of Wellbeing, 2009). In the UK, happiness entered electoral politics in the speeches of, and Quality of Life policy commission set up by, the UK Conservative Party leader (Cameron, 2006; Watt, 2007). Its implications have been examined by a Strategy Unit report (Donovan et al., 2002), by Defra's Whitehall Well-being Working Group (Easton, 2006), by a Government Office for Science 'Foresight' project (Foresight Mental Capital and Wellbeing Project, 2008) and in various other departments (sustainable-development.gov.uk, 2007), and the government has just announced that official "general wellbeing" indicators will in future be produced by the Office for National Statistics (Stratton, 2010).

Those championing SWB in policy have tended to argue as a first step for just this kind of systematic measurement: the creation of wellbeing indicators, standing alongside existing economic indicators, to assess performance at national and/or regional levels (e.g. Michaelson et al., 2009). Policy in an extremely wide range of areas has potential to affect individuals' SWB; not only areas with an obvious and direct connection, such as mental health services, but also taxation, (un)employment, environment, and many more. It could be argued, therefore, that SWB considerations should inform policy development in those areas; Veenhoven (2004), for example, writes that "the greatest happiness principle deserves a more prominent place in

²⁵As with all heritability measures, however, this figure is as much dependent on the range of variation in material circumstances in one society at one time as it is on any genetic mechanism. For example, if all of a society's children were raised in absolutely identical circumstances, then the heritability of all traits—being the percentage of variation accounted for by genetic factors—would necessarily be 100%.

policy making". This 'new utilitarianism' is potentially subject to the same variety of critiques as the traditional brand, however.

At a philosophical level, Nozick (1974) finds a utilitarian system vulnerable to the so-called 'utility monster', who derives greater utility from the sacrifice of others than those others lose—such that total utility is increased by sacrificing everybody to the monster—and Parfit (1986) offers the 'repugnant conclusion' that a world of many people just barely surviving could have greater total utility than a world of fewer people with higher individual utilities. In practice, these objections are easily dismissed: the 'utility monster' does not exist, and both arguments rely on naïve interpretations of Bentham's 'greatest good for the greatest number' as a simple sum (or alternatively, in Nozick's case, average) of individual utilities.

But this point does raise an important question—what *should* be the social welfare function that aggregates individual utilities?—to which there is no clear answer. International SWB research often uses mean self-ratings, but this assumes cardinality and implies total agnosticism as to the distribution of happiness. A 'U-index' is a further possibility (see subsection 2.1.2). So too is an (ordinal-only) Pareto-optimality principle; but this is no less problematic in relation to the allocation of wellbeing than it is in relation to other resources (Sen, 1978).²⁶

Another class of objections to any role for SWB in the policy process concerns ethics and rights: unconstrained maximisation of a happiness indicator (or indeed any other indicator) could take societies in ethically questionable directions (Johns & Ormerod, 2007, p. 14). For example, Ng's arguments (1997, pp. 1849–50) for the "widespread use" of "electrical, chemical and mechanical stimulation of... the pleasure centres in our brain" seems not so far removed from the widespread use in Huxley's *Brave New World* of the drug 'soma' to induce blissful contentment with caste-based roles (e.g. Veenhoven, 2004); whether this is vision is utopian or dystopian is open to debate. As another example, the risk that the rights of minorities could be violated under a utilitarian principle is raised—and alleged to have been realised in the form of ethnic cleansing in the Kingdom of Bhutan (Johns & Ormerod, 2007, p. 70).

In essence, the criticism here is that utilitarianism is a purely consequentialist ethical theory, concerned only with the outcomes of actions, and therefore fails to place off-limits actions which are widely held to be wrong. But this criticism is of a straw man. In practice, there is no reason why the consideration of likely happiness outcomes in relation to policy should be accompanied by the jettisoning of all ethical rules, including deontological ideas about what is inherently right or wrong. Maximising happiness is no more sinister than maximising income or any other quantity; it is only that the most relevant rule-based constraints on our means of doing so may not be the same for every maximand.

As noted in subsection 4.5 in relation to development, adaptation is sometimes identified as a further problem: what if people in objectively bad situations are subjectively satisfied? Sen (1999, p. 19) notes that an emphasis on "*mental satisfaction*" (his italics) could be opposed to the "creative discontent and constructive dissatisfaction" necessary to overcoming deprivation and oppression. More specifically, Deaton (2008, pp. 30–31) argues it is right that "self-reports of satisfaction with life, with income, or health are given little weight" in evaluating development progress. However, as also noted in that subsection, the problem of adaptation—which is neither universal nor indiscriminate—may have been exaggerated, and in practice does not seem so acute as to rule SWB out of policy consideration, especially in richer countries.

Finally, partisan political objections are made: generally, in relation to government interest in SWB; and specifically, in relation to supposed policy implications of some of the findings of SWB research. In the general case it is sometimes argued, along classic liberal lines, that making people happy is not a legitimate role of government, which should confine itself to

²⁶Of the Pareto-optimality principle, Sen (1978, 22) writes: "This may seem alright as far as it goes, but how far does it go? ... If preventing the burning of Rome would have made the emperor Nero feel worse off, then letting him burn Rome would have been Pareto optimal. In short, a society or an economy can be Pareto optimal and still be perfectly disgusting."

the protection of property rights and prevention of harm: [Thompson & Marks \(2008\)](#) see this argument behind the association of government interest in wellbeing with 'paternalism' and the 'nanny state' in sections of the media.²⁷ As to the specifics, commentators on the Right have taken against the suggested benefits of greater redistributive taxation (e.g. [Wilkinson, 2007](#)), for example, while the Left has balked at findings of a positive association of SWB with stable family life, religious faith, or ethnic homogeneity²⁸ ([Ormerod & Johns, 2007](#)).

These partisan objections highlight what is perhaps the central issue. SWB is not a technocratic panacea: it "does not actually help us to solve the problem of divergent social values and policy objectives... and does not provide us with a set of recommendations that over-ride political antagonisms and public debate" ([Duncan, 2008](#)). In summary, it is not clear exactly what maximising aggregate social happiness means, and even if it were, this would not be sufficient as a guide to policy.

However, SWB research can inform our public discourse with valuable empirical data (*ibid.*). It opens to serious and hard-headed scrutiny whether there are sources of welfare beyond income and consumption, what those sources are, and what some of the trade-offs between them may be. It is therefore an especially valuable input into contemporary debates regarding the desirability and feasibility of perpetual economic growth (e.g. [Jackson, 2009](#); [Simms et al., 2010](#)). [Diener et al. \(2009, Chapter 4\)](#) explore a variety of additional ways in which SWB research can contribute to policy development.

7 Where next for happiness economics?

Despite the recent surge in interest in the economics of happiness, it is still a relatively young area, with substantial scope for further research: either answering new questions, or providing better answers to existing questions. These could be questions about the impacts of different factors on individuals' SWB; questions about SWB itself; or questions which SWB can help to answer.

Questions about what affects SWB Many of the factors already identified as influential on SWB could benefit from further research, especially research using data collected for the purpose: the secondary data sets used in many analyses lack detail on some of the most important determinants of SWB. For example, there still appears to be scope for research into income and consumption effects on SWB—including measures of these relative to different reference groups—and into the extents of rivalry and habituation in respect of different kinds of consumption (and of other activities).

A focus on how different factors interact would also help in producing a more complete and nuanced picture of the factors affecting SWB. For example, how do age or education or political, religious or environmental views mediate the impacts of other variables and life events? Models here include [Finkelstein et al. \(2008\)](#), who examine the impact of health status on the marginal utility of income, and [Clark et al. \(2005\)](#), who estimate different SWB functions for different classes of individuals emerging from their data. In addition, studies might usefully deal more explicitly with factors among which there is substantial multicollinearity, such as income, education, and health.

²⁷They cite as examples columnists Minette Marrin—"The 'national happiness audit' would enable us to form and judge social policies... This is without a doubt the scariest idea I have read for many years" ('The dangerous business of happiness', *The Sunday Times*, 18 June 2006)—and Alexander Waugh—"... if any of these foppish utilitarian suggestions were put into practice, nothing short of national manic-depression would ensue" ('Enter the happiness police', *The Daily Telegraph*, 13 March 2005).

²⁸See [Layard \(2003\)](#) on the work of [Glaeser & DiPasquale \(1999\)](#) and [Sampson et al. \(1997\)](#) on ethnic homogeneity.

Questions about SWB itself As regards SWB itself, the temporal dimension has been relatively little studied in the economic literature to date, but is important for the interpretation and use of SWB data. Greater use of ESM/EMA and DRM could help in developing a better understanding of how SWB varies hour by hour or day by day. For example, individuals are commonly asked for SWB evaluations in the ill-defined general present ('nowadays', 'these days', etc.). What is the effect of past SWB (and past factors which affected it) on such evaluations? And, perhaps more challengingly, what is the influence of expectations regarding future SWB and future causal factors (income, marital status, environmental quality and so on)? Van Praag & Ferrer-i-Carbonell (2008, ch. 7) and Senik (2008b) provide a first glimpse at these issues. These methods could also provide rich and credible data sets for use in various other kinds of analyses, such as examining the effects of different health states on wellbeing (Dolan & Kahneman, 2008), or linking wellbeing measures to choice behaviour (Smith, 2008).

The spatial dimension of SWB also appears somewhat neglected. Spatial techniques used in other disciplines and other areas of economics (such as hedonic pricing studies) might valuably be applied to SWB data (to date, only Stanca, 2010 reports the use of such methods). The social dimension of SWB is also a promising area, potentially using the same spatial methods (since proximity in social network terms can provide alternative conceptions of space, distance and neighbourhood). Fowler & Christakis (2008) and Christakis & Fowler (2009) appear to provide the only published research on this topic so far (and are not working within economics); they relate SWB to social proximity as measured in a long-term longitudinal medical study and using the social networking site Facebook.

Other areas that might be fertile ground for new economic research into SWB include the use of anchoring vignettes—to try to correct for variation in reporting functions, as attempted by Angelini et al. (2008)—and of evolutionary or sociobiological reasoning—to provide a theoretical grounding for hypotheses and interpretations regarding the factors that influence SWB, as begun by Rayo & Becker (2007a; 2007b).

Questions that SWB can help answer Two additional kinds of economic questions could benefit from further application of the SWB approach. First, as noted in subsection 4.3, SWB data provides a new and potentially powerful method for non-market valuation. And second, it could permit research into the utility impacts of differing choice sets (if it is allowed that factors such as self-control may mean that more choice is not always preferable), which is simply not possible using revealed preference data (see Koszegi & Rabin, 2008).

8 Conclusions

The economics of happiness or SWB is a relatively new field within the discipline (albeit one with clear antecedents), and it continues to expand and mature. Having arisen at the edges of several other research areas, increasingly it has a momentum of its own.

While there can be no formal proof that one person's happiness is comparable to another's, a large body of evidence now indicates that such an assumption can be both reasonable and useful. Meanwhile, the application of increasingly sophisticated econometrics has ensured that the additional assumptions required for the analysis of SWB data become progressively less restrictive. The assumptions implicit in some empirical work, especially with cross-sectional and cross-cultural data, can still be problematic, however.

SWB research suggests—in line with intuition, but not always with the emphasis of recent economic literature—that absolute income is only one of a wide range of factors with important implications for human welfare. SWB approaches can complement existing approaches to certain economic questions, such as non-market valuation, where both their strengths and their weaknesses are different. It also opens some new question to potential investigation. In

respect of public policy, it is of particular value in informing debate around the desirability and feasibility of continuing economic growth.

Scope remains for new research at many levels—theoretical, methodological, and empirical—in the economics of SWB. Temporal, spatial and social dimensions seem especially ripe for future investigation.

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